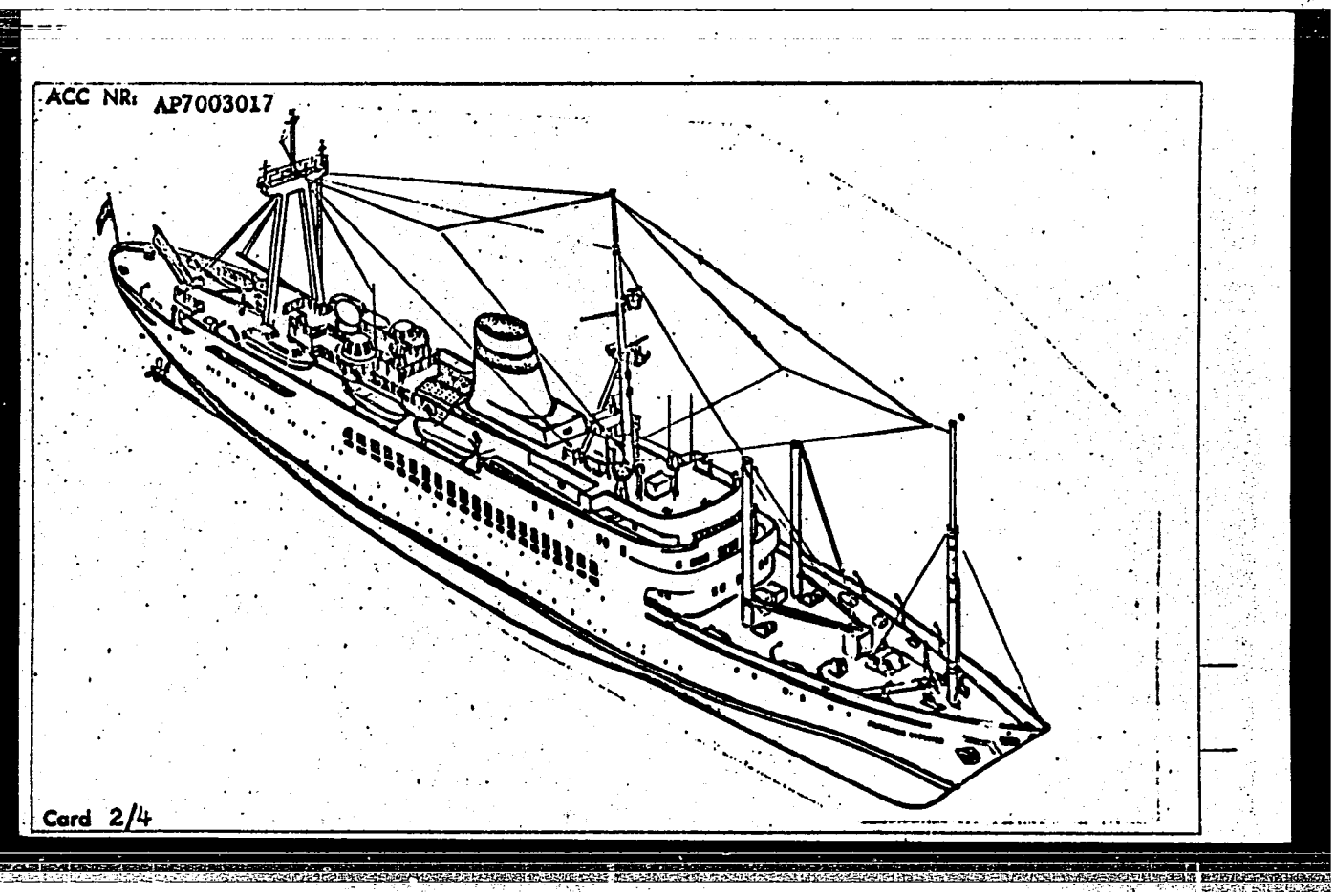

ACC. NR: AP7003017

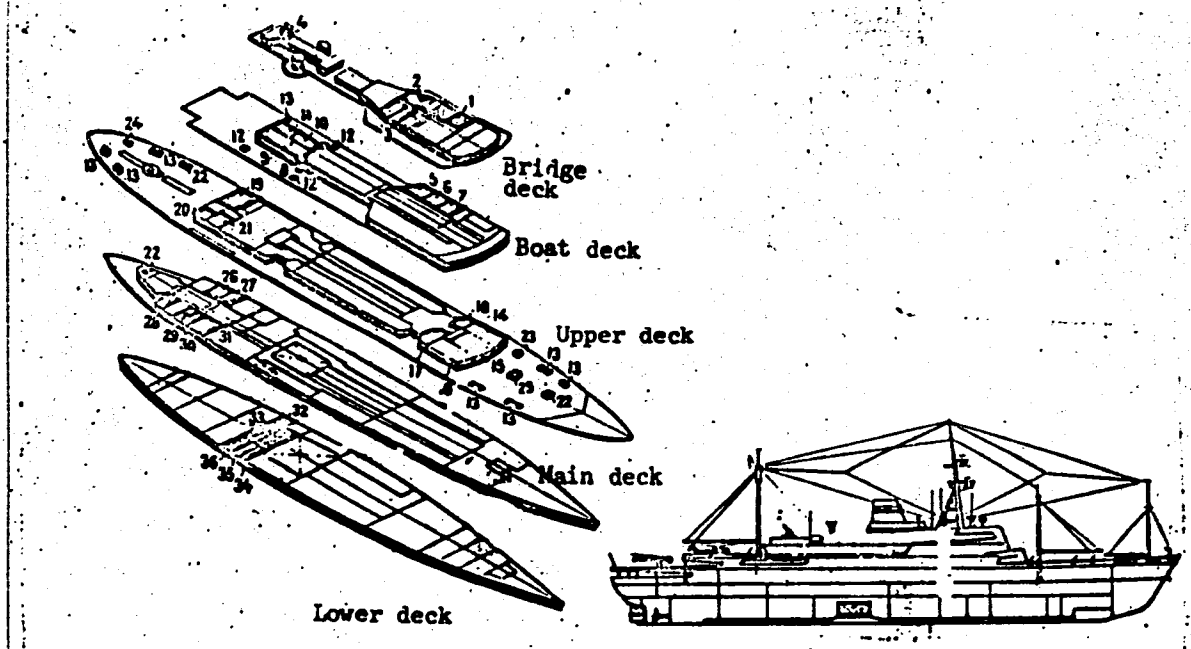

Fig. 1. Full and deck views of the *Akademik Kurchatov* and its laboratory locations

Card 3/4

ACC NR: AP7003017

1 - Hydrography lab; 2 - ionosphere lab; 3 - meteorology lab; 4 - radar antenna; 5 - acoustics lab; 6 - seismology lab; 7 - drafting room; 8 - sea-wave lab; 9 - heat lab; 10 - cosmic-radiation and atmospheric-disturbance lab; 11 - aerology lab; 12 - cable-reel bedplates; 13 - oceanographic-survey winches; 14 - hydrology lab; 15 - hydrochemistry lab; 16 - geology lab; 17 - geochemistry lab; 18 - hydrooptics lab; 19 - biology lab; 20 - radio-chemistry lab; 21 - radiophysics lab; 22 - electric-cable reels; 23 - salinom-eter winch; 24 - GEK winch; 25 - deep-sea winch; 26 - terrestrial-mag-netism lab; 27 - terrestrial-electricity lab; 28 - isotope lab; 29 - auto-clave; 30 - microbiology lab; 31 - telemetry lab; 32 - photo lab; 33 - gra-vimetry lab; 34 - telemetry lab; 35 - equipment space; 36 - experimental workshop. Orig. art. has: 10 figures. [ATD PRESS: 5042-F]

SUB CODE: 08 / SUBM DATE: none

Card 4/4

ARASHKEVICH, V.M., dotsent; VESELOV, A.I., professor; VOLOTKOVSKIY, S.A., professor; ZHUKOV, L.I., dotsent; IPPOLITOV, M.D., dotsent; KUTYUKHIN, P.I.,dotsent; KOMPANIYETS, V.P., dotsent; MALAKHOV, A.Ye., professor; MEDVEDACHIN, G.I., dotsent; MYABUKHIN, G.Ye., professor; SAKOVTSEV, G.P., dotsent; STOYLOV, B.A., dotsent;TROP, A.Ye.,dotsent; FEDOROV,S.A., professor; YAROSH, A.Ye., dotsent, redaktor; TARKHOV, A.G., redaktor; GAMBURTSEVA, Ye.Ye., redaktor; GUROVA, O.A., tekhnicheskiy redaktor.

[Collection of articles on geophysical methods of prospecting] Sbornik statei po geofizicheskim metodam razvedki. Moskva,Gos. nauchno-tekhn.izd-vo lit-ry po geol. i okhrane nedr, 1955. 109 p. (MLRA 8:11)

1. Sverdlovsk.Gornyy institut.
(Prospecting--Geophysical methods)

IPPOLITOV, M. F.

IPPOLITOV, M. F.: "Investigation of the operation of radial settling tanks in the water economy of blast-furnace-gas scrubbing at high gas pressure." Min Higher Education USSR. Ural Polytechnic Inst imeni S. M. Kirov. Sverdlovsk, 1956. (Dissertation for the Degree of Candidate in Technical Sciences).

Source: Knizhnaya letopis' No. 28 1956 Moscow

IPPOLITOV, M.F. (Sverdlovsk)

Using hydrocyclones to clarify industrial waste waters. Vod. i san. tekh. no.12:3-6 D '58. (MIRA 11:12)
(Sewage--Purification) (Separators (Machines))

IPPOLITOV, M.F., dotsent, kand.tekhn.nauk

Investigating the hydrodynamic characteristics of a circular settling tank. Trudy Ural.politekh.inst. no.85:5-11 '60. (MIRA 14:8)

(Water—Purification)

IPPOLITOV, M.F., dotsent, kand.tekhn.nauk; YUZHANINOV, A.G., inzh.

Investigating the work of a house sewerage system collecting the waste waters of a metallurgical plant. Trudy Ural.politekh.inst. no.85:43-52 '60. (MIRA 14:8)

(Sewerage)

CHUVATOV, V.V.; BEREZIN, N.N.; METSGER, E.Kh.; NAGIN, V.A.; KARTASHOV, N.A., kand. tekhn. nauk, dots.; MIL'KOV, N.V., kand. tekhn. nauk; BYCHKOV, M.I., kand. tekhn.nauk, dots.; SUKHANOV, V.P., SHLYAPIN, V.A.; KORZHENKO, L.I.; ABRAMYCHEV, Ye.P.; KAZANTSEV, I.I.; YARES'KO, V.F.; LUKOYANOV, Yu.N.; DUDAROV, V.K.; BALINSKIY, R.P.; KOROTKOVSKIY, A.E.; PONOMAREV, I.I.; NOVOSEL'SKIY, S.A., kand. tekhn.nauk, dots.; IL'INYKH, N.Z.; TSITKIN, N.A.; ROGOZHIN, G.I.; PRAVOTOROV, B.A.; ORLOV, V.D.; RACHINSKIY, M.N.; KULTYSHEV, V.N.; SMAGIN, G.N.; KUZNETSOV, V.D.; MACHERET, I.G.; SHEGAL, A.V.; GALASHOV, F.K.; ANTIPIN, A.A.; SHALAKHIN, K.S.; RASCHEKTAYEV, I.M.; TISHCHENKO, Ye.I.; FOTIYEV, A.F.; IPPOLITOV, M.F.; DOROSINSKIY, G.P.; ROZHKOV, Ye.P.; RYUMIN, N.T.; AYZENBERG, S.L.; GOLUBTSOV, N.I.; VUS-VONSOVICH, I.K., inzh., retsenzent; GOLOVKIN, A.M., inzh., retsenzent; GUSELETOV, A.I., inzh., retsenzent; KALUGIN, N.I., inzh., retsenzent; KRAMINSKIY, I.S., inzh., retsenzent; MAYLE, O.Ya., inzh., retsenzent; OZERSKIY, S.M., inzh., retsenzent; SKOBLO, Ya.A., dots., retsenzent; SPERANSKIY, B.A., kand. tekhn. nauk, retsenzent; SHALAMOV, K.Ye., inzh., retsenzent; VOYNICH, N.F., inzh., red.; GETLING, Yu., red.; CHERNIKHOV, Ya., tekhn. red.

[Construction handbook] Spravochnik stroitelia. Red.kollegiia: M.I. Bychkov i dr. Sverdlovsk, Sverdlovskoe knizhnoe izd-vo. Vol.1. 1962. 532 p. Vol.2. 1963. 462 p. (MIRA 16:5)
(Construction industry)

USSR/Medicine - Veterinary Medicine Apr 49
Medicine - Phytocides

"The Application of Phytocides in Veterinary Surgery," M. S. Ippolitov, Chief, Veshenskaya Interrayon Vet Bacteriol Lab, 1½ pp

"Priroda" No 4

Describes principles for using phytocides in veterinary work, based on data developed by B. Tokin, V. Staletskiy, and the author. Use of phytocides is an off-shoot of considerable research carried out with onions and garlic (by A. Yevgrafov and others). Author describes one

57/49T102

USSR/Medicine - Veterinary Medicine (Contd) Apr 49

of his experiments in some detail. Points out necessity for compiling data from all veterinary hospitals on the use of phytocides of onions and garlic for treating a wide range of illnesses, and need of further research on theory of phytocide therapy.

57/49T102

IPPOLITOV, M. S. CHIEF,

IPPOLITOV, M. S.

USSR/Medicine - Bacteriology Sep 50

"Antibacterial and Therapeutic Effects of the Onion," M. S. Ippolitov

"Priroda" No 9, pp 62, 63

Gives detailed account of applications of onion and garlic preps in veterinary practice. States that onion juice stops growth of microscopically visible forms of Brucella entirely, of visible forms of Bact subpestifer by 96.4%, of visible forms of Bact coli by 94.4%, of the causative factor of partyphoid abortion of mares by 99.5%.

212T9

IPPOLITOV, M. S.

end of deertner's paratyphoid by 97.8%. In a culture of anthrax onion juice increases sporulation by a factor of 3, while coccal forms and gramnegativity appear, and the pathogenicity and dyeing properties change. By using a modification of the method of influencing microorganisms by means of heterogenic "feedlings" [formiki" - bacteriophage] "feedlings" [formiki" - bacteriophage] strains[7] (cf. Bukhov, Vol'forts), the author was able to observe the transformation of deertner's paratyphoid bacteria from the visible into the invisible form, a change which proceeded under modification of pathogenic, saccharolytic, and antigenic properties of the culture.

212T9

IPPOLITOV, M. S.

USSR/Medicine (Veterinary) - Antibiotics Nov 51

"Application of Onion and Garlic in Veterinary Surgery," Prof V. I. Stelletskiy (deceased), M.S. Ippolitov

"Priroda" Vol XL, No 11, pp 57-59

Discusses application of phytoncides of garlic and onion as antiseptics which speed up the healing of infected wounds. Describes various methods (steaming, use of solns and poultices, etc.) used by them in applying phytoncides. States that although synthetic antiseptics are available, phytoncides should be used, because they are more effective.

207T63

VOLKOVA, A. A., IPPOLITOV, M. S.

Sheep - Diseases

Resistance to various chemical substances of organisms causing dysentery in lambs. Veterinariia 29 no. 9, 1952.

Monthly List of Russian Accessions, Library of Congress. November, 1952. UNCLASSIFIED.

IPPOLITOV, N.D.

ARASHKEVICH, V.M., dotsent, redaktor; VESELOV, A.M., professor, redaktor; VOLOTKOVSKIY, S.A., professor, redaktor; ZHUKOV, L.I., dotsent, redaktor; IPPOLITOV, N.D., dotsent, redaktor; KAMPANEYETS, V.P., dotsent, redaktor; KUTYUKHIN, P.I., dotsent, redaktor; MALAKHOV, A.Ye., professor, redaktor; NEUDACHIN, G.I., dotsent, redaktor; RYABUKHIN, G.Ye., professor, redaktor; SAKOVTSEV, G.P., dotsent, redaktor; STOYLOV, B.A., dotsent, redaktor; TROP, A.Ye., dotsent, redaktor; FEDOROV, S.A., professor, redaktor; YAROSH, A.Ya., dotsent, redaktor; SLAVOROSOV, A.Kh, redaktor izdatel'stva; ALADOVA, Ye.I., tekhnicheskiy redaktor

[Problems in the efficient organization of surveying in mining enterprises] Voprosy ratsionalizatsii marksheidarskoi sluzhby na gornykh predpriiatiiakh. Moskva, Ugletekhizdat, 1955. 128 p. (MLRA 9:10)

1. Sverdlovsk, Gornyy institut.
(Mine surveying)

IPPOLITOV, N.D., dots.

Underground mine surveying in unstable lateral formations. Izv.vys. ucheb.zav.; gor.zhur. no.4:36-50 '58. (MIRA 11:11)

1. Sverdlovskiy gornyy institut.
(Mine surveying) (Subsidences (Earth movements))

IPPOLITOV, M.P., insh.

New equipment, new cadres. Avtom., telem. i sviaz' no.11:23-25 N '57.
(Railroads--Signaling) (Technical education) (MLRA 10:11)

IPPOLITOV, N.P.

Broaden the movement of communist labor. Avtom.telem. i sviaz' 4 no.8:4-6 Ag '60. (MIRA 13:8)

1. Nachal'nik otdela kadrov, truda i zarplaty Glavnogo upravleniya signalizatsii i svyazi.
(Socialist competition) (Railroads--Signaling)

IPPOLITOV, N.P., inzh.

Undivide(ıttention should be paid to safety engineering regulations. Avtom., telem. i sviaz' 6 no.9:5-6 S '62. (MIRA 15:9)
(Railroads—Safety regulations)

ACCESSION NR: AP3000249 S/0119/63/000/005/0027/0028

AUTHOR: Ippolitov, N. V.; Pukhlik, Yu. A.

TITLE: Device for controlling temperature of a press

SOURCE: Priborostroyeniye, No. 5, 27-28, 1963.

TOPIC TAGS: temperature controller, KMT-1 thermistor, P13 transistor

ABSTRACT: A device consisting of a primary temperature element, a controller, and a power supply unit is described. It is intended for keeping constant the temperature of a compression mold at a point within 140-180C. A KMT-1 thermistor is used as a temperature element, three P13 transistors are employed in the amplifier, and a MKU-48 relay serves as a final control element. Sensitivity, 0.5C; power consumption, under 10w; power supply, 220 v, 50 cps. [Abstracter's note: it is not clear from the Russian original whether an actual device or a blueprint is described]. Orig. art. has: 1 figure.

ASSOCIATION: none

SUBMITTED: 00 DATE ACQ: 14Jun63 ENCL: 00

Card 1/2

IPPOLITOV, O.A.

IPPOLITOV, O.A.

Multiple progressive ossifying myositis. Ortop.travm. i protez. no.3:53-54 My-Je '55. (MLRA 8:10)

1. Iz gospital'noy khirurgicheskoy kliniki im. A.G.Rusanova (dir.prof. V.P.Radushkevich) Voronezhskogo meditsinskogo instituta.
(MYOSITIS OSSIFICANS, multiple progr.)

IPPOLITOV, O.A.

Case of compression of the shoulder with a metallic ring causing a disorder of blood supply. Ortop. travm. i protez. 21 no. 9:59-60 S '60. (MIRA 13:12)

1. Iz khirurgicheskogo otdeleniya 14-y gorodskoy bol'nitsy g. Voronezha (glavnyy vrach - V.T. Stogova).
(SHOULDER—BLOOD SUPPLY)

IPPOLITOV, S.

Infrared photography. Nauka i zhizn' 23 no.6:51 Je '56. (MLRA 9:9)

(Photography, Infrared)

KAZANSKAYA, I.I., kand.tekhn.nauk; PANFILOV, M.G., inzh.; IPPOLITOV, V.I.

Causes for the appearance of defects in helical-cross rolling of circular periodic shapes. Stal' 22 no.9:824-826 S '62. (MIRA 15:11)

1. Vsesoyuznyy nauchno-issledovatel'skiy i proyektno-konstruktorskiy institut metallurgicheskogo mashinostroyeniya.
(Rolling (Metalwork))

ACCESSION NR: AP4043640 S/0056/64/047/002/0627/0631

AUTHOR: Ippolitov, V. T.

TITLE: Angular distribution of fast-deuteron polarization in elastic scattering

SOURCE: Zh. eksper. i teor. fiz., v. 47, no. 2, 1964, 627-631

TOPIC TAGS: elastic scattering, deuteron polarization, angular distribution, energy distribution, scattering amplitude, phase shift

ABSTRACT: The polarization of deuterons elastically scattered by complex nuclei is calculated using a method proposed by I. I. Levintov (DAN SSSR, v. 107, 240, 1956), based on the fact that the polarization is given by a ratio of quadratic functions of the parameters of the scattering matrix. This makes it possible to obtain the angular and energy dependences of the polarization without calculating the scattering matrix parameters completely, for it is suf-

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ACCESSION NR: AP4043640

ficient to separate the common radial integral in the matrix element, and this integral cancels out in the final expression for the polarization. Formulas are obtained for the vector and tensor polarization in the approximation of high energies, small angles, and small spin-orbit part of the scattering phase shift. The data obtained are compared with the available experimental data. The parameters characterizing the optical potential of the deuteron are also determined. "The author is deeply grateful to Professor G. F. Drukarev for guidance." Orig. art. has: 3 figures and 12 formulas.

ASSOCIATION: None

SUBMITTED: 22Feb64

ENCL: 00

SUB CODE: NP

NR REF SOV: 004

OTHER: 006

Card 2/2

IPPOLITOV, Ya.Ya., kandidat tekhnicheskikh nauk.

Effect of the moisture content of the warp and the relative humidity of air upon the weaving process. Tekst.prom.14 no.3:25-29 Mr '54. (MLRA 7:5)

(Weaving)

IPPOLITOV, Ya.Ya.

MOSHIN, V.I., inzhener; IPPOLITOV, Ya.Ya., kandidat tekhnicheskikh nauk.

First book on ventilation and pneumatic transportation in bast fiber mills. Tekst.prom. 14 no.10:53-54 O '54. (MLRA 7:10)
(Textile factories--Heating and ventilation) (Conveying machinery)

IPPOLITOV, Ya.Ya.

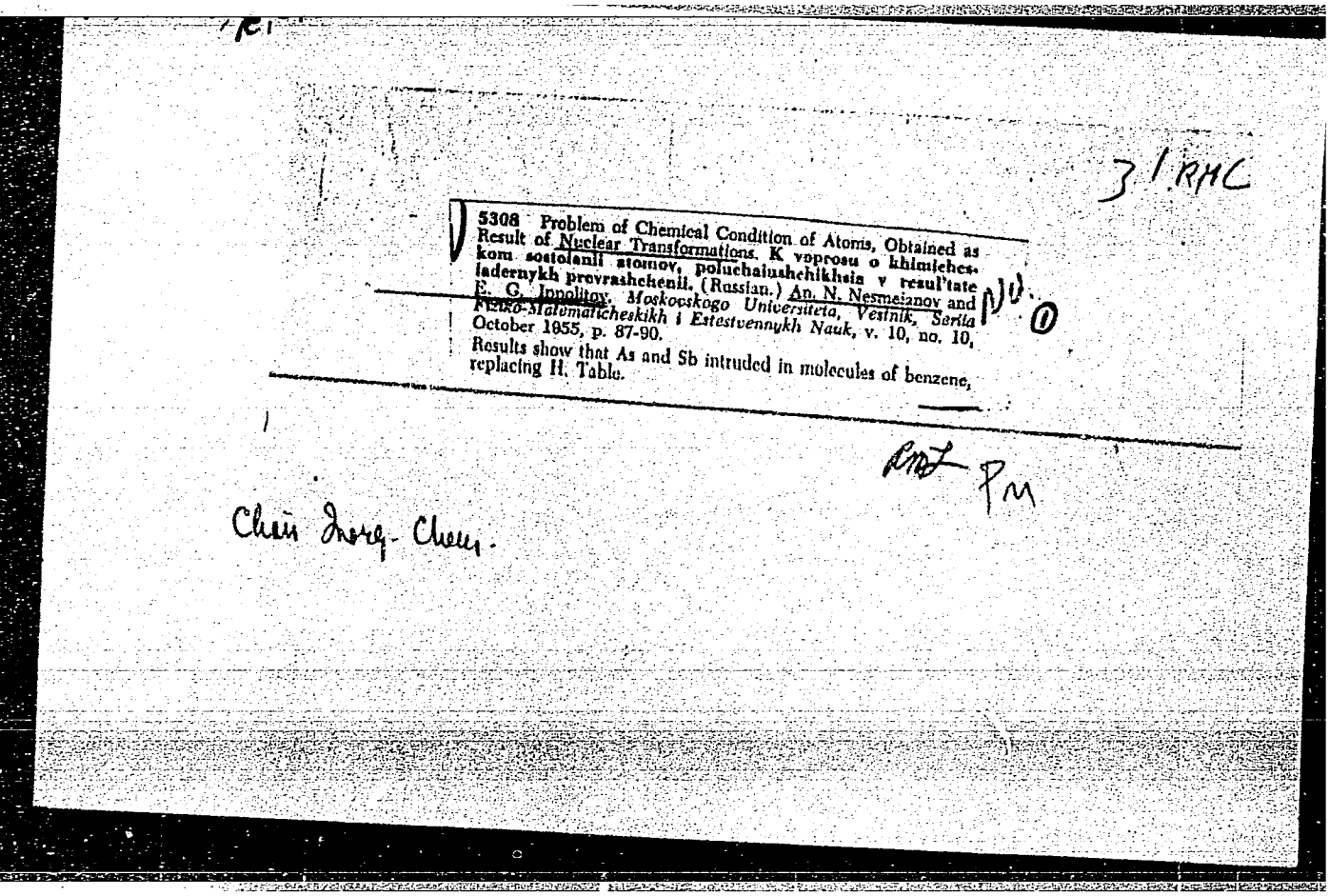
Pneumatic nozzle for atonizing water. Suggestion by IA.IA. Ippolitov. Prom.energ.11 no.4:22 Ap '56. (MLRA 9:7)
(Nozzles)

IPPOLITOV, Yakov Yakovlevich; RATTEL' K.N., retsenzent i spetsred.; AKSENOVA, I.I., red.; KNAKNIN, M.T., tekhn.red.

[Effect of air parameters and moisture content of the cotton on spinning] Vliianie parametrov vozdukha i vlazhnosti khlopka na protsess priadeniia. Pod red. K.N.Rattelia. Moskva, Izd-vo nauchno-tekhn.lit-ry RSFSR, 1960. 59 p.

(MIRA 14:4)

(Cotton spinning)



31 RHC

5308 Problem of Chemical Condition of Atoms, Obtained as Result of Nuclear Transformations. K voprosu o khimicheskom sostoianii atomov, poluchaiushchikhsia v rezul'tate iadernykh prevrashchenii. (Russian.) An. N. Nesmeianov and E. G. Ippolitov. *Moskovskogo Universiteta, Vestnik, Serila Fiziko-Matematicheskikh i Estestvennykh Nauk*, v. 10, no. 10, October 1955, p. 87-90.

Results show that As and Sb intruded in molecules of benzene, replacing H. Table.

Chem Inorg. Chem.

5.2400 (B)

~~5(2)~~

68613

S/020/60/130/05/024/061

B011/B005

AUTHORS: Chernyayev, I. I. Academician, Nikolayev, N. S., Ippolitov, Ye. G.

TITLE: New Methods of Preparing Hexafluoroplatinates

PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol 130, Nr 5, pp 1041 -1043 (USSR)

ABSTRACT: By the methods used hitherto, hexafluoroplatinates could not be prepared in aqueous solution since they hydrolyze irreversibly. The authors found that a mixture of bromine with bromopentafluoride dissolves metallic platinum rather quickly (pure BrF_5 does not act on platinum). A dark-yellow crystalline compound $PtBr_2F_{10}$ was obtained by evaporating the solution. This salt is instantaneously hydrolyzed by water forming bromine vapors. It is insoluble in hydrogen fluoride, inflames on contact with alcohol, and does not react with CCl_4. $PtBr_2F_{10}$ is well soluble in BrF_3. When potassium fluoride is added to the resulting clear red solution and the solvent is removed under vacuum at room temperature, $K_2PtF_6 \cdot 1.1\ BrF_3$ remains

Card 1/3

New Methods of Preparing Hexafluoroplatinates

behind as a light-yellow residue. This salt decomposes in vacuum at 250° liberating BrF_3. After leaching the residue with hot water and filtering the solution, lemon-yellow crystals of potassiumhexafluoroplatinate were obtained from the latter. The preparation of this salt according to the equation: $(BrF_2)PtF_6 + 4KF = K_2PtF_6 + 2KBrF_4$ gives good yields (90%). A preparation method is given in the experimental part. The substance obtained was analyzed. Table 1 shows the results. Subsequently, results obtained by other analytical methods are given. The analytical results show that 4 of 6 fluorine atoms are separated by pyrohydrolysis. This offers an additional proof that fluorine is not substituted by the OH- or H_2O groups. Aspect and properties of the potassiumhexafluoroplatinate were in exact agreement with the data found in publications. The density of the salt was 4.81 ± 0.01 g/cm^3. The dissolution of platinum in the mixture of bromine with bromopentafluoride is explained by the formation of monobromofluoride in the mixture which corrodes platinum rather quickly. The authors found that

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New Methods of Preparing Hexafluoroplatinates S/020/60/130/05/024/061
B011/B005

BrF_3 is formed besides the difluorobromoniumhexafluoroplatinate (see Schemes (1), (2)). According to the analytical data, the summary equation $Br_2 + 5BrF_5 + Pt = (BrF_2)_2PtF_6 + 5BrF_3$ corresponds to the reaction products obtained by the authors. V. A. Golovnya, and S.K.Sokol are mentioned in the paper. There are 1 table and 14 references, 4 of which are Soviet.

ASSOCIATION: Institut obshchey i neorganicheskoy khimii im. N. S. Kurnakova Akademii nauk SSSR (Institute of General and Inorganic Chemistry imeni N. S. Kurnakov of the Academy of Sciences, USSR)

SUBMITTED: October 14, 1959

Card 3/3

80488
S/020/60/132/02/37/067
B011/B002

5.2400 (B)

AUTHORS: Chernyayev, I. I., Academician, Nikolayev, N. S., Ippolitov, Ye. G.

TITLE: New Methods of Producing Hexafluoro Platinates. Fluorination by Chlorotrifluoride

PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol. 132, No. 2, pp. 378-379

TEXT: Since chlorotrifluoride is the most active fluorinating agent among all fluorine compounds and does not develop by-products during fluorination, the authors investigated its action on a platinum - potassium bifluoride mixture. The present paper is the continuation of a former one (Ref. 1) and its purpose is the development of a better method of producing potassium hexafluoro platinum. The authors found out that platinum in the above mixture (5 g of platinum black, 3 g of potassium bifluoride) is completely transformed into potassium hexafluoro platinate after being heated up to 200° in a nickel boat in the chlorotrifluoride current. The product is separated from the potassium bifluoride excess by means of recrystallization in hot water. The conversion of potassium hexachloro platinate in potassium hexafluoro platinate by means of chlorotrifluoride showed even better results. This process, however, must take place at 500° with

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S/020/60/132/02/37/067
B011/B002

New Methods of Producing Hexafluoro Platinates. Fluorination by Chlorotrifluoride

gaseous ClF_3 (reaction (1)). This process stretches over approximately 1.5 h. The boat can only be removed from the quartz tube in which the experiment was conducted, after it has been cooled down, otherwise K_2PtF_6 would react with the atmospheric moisture. The crystals obtained by recrystallization in water were completely identical with those obtained after the process at 200°. The authors developed a method for the analysis of K_2PtF_6 by means of the pyrohydrolysis of the weighed portion with overheated vapor (Ref. 1). This method however, was too time-consuming. Therefore they suggest another method: a weighed portion of salt of 0.2-0.4 g is mixed in the platinum boat with 1 g of calcined soda and covered by a soda layer. For 15-20 min. the boat is heated in the quartz tube in the H_2 current up to 400°. The loss in weight was determined after the boat had been cooled down. It was in agreement with the equation (see Equation). After the sample was leached on a filter by hot water, the platinum residue was annealed on the filter and weighed. In the filtrate, fluorine was determined as PbClF, and potassium as K_2PtCl_6. The analysis did not take more than one day. The density of the synthesized preparation was 4.79 g/cm³ (in publications it is 4.83 g/cm³). Experiments with gaseous fluorine under the same conditions showed that K_2PtCl_6 is transformed into potassium hexafluoro platinate. Its yield however, is much lower and requires purification by recrystallization. There are

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80488

New Methods of Producing Hexafluoro Platinates. Fluorination by Chlorotrifluoride

S/020/60/132/02/37/067
B011/B002

2 references, 1 of which is Soviet.

ASSOCIATION: Institut obshchey i neorganicheskoy khimii im. N. S. Kurnakova Akademii nauk SSSR (Institute of General and Inorganic Chemistry imeni N. S. Kurnakov of the Academy of Sciences, USSR)

SUBMITTED: January 30, 1960

Card 3/3

NIKOLAYEV, N.S.; IPPOLITOV, Ye.G.

Preparation of anhydrous hydrogen fluoride from ammonium fluoride and hydrogen chloride. Zhur.neorg.khim. 6 no.4:1001 Ap '61.
(MIRA 14:4)

(Hydrochloric acid) (Ammonium fluoride) (Hydrochloric acid)

S/020/61/136/001/023/037
B016/B055

AUTHORS: Nikolayev, N. S. and Ippolitov, Ye. G.

TITLE: Synthesis of Complex Fluorides of Hexavalent Rhenium

PERIODICAL: Doklady Akademii nauk SSSR, 1961, Vol. 136, No. 1, pp. 111-113

TEXT: The authors prepared potassium octafluorhenate K_2ReF_8 by direct reaction of liquid rhenium hexafluoride ReF_6 with potassium fluoride KF. In the syntheses attempted previously by other authors, K_2ReF_8 could either not be isolated (Ref. 1), or the substance obtained did not correspond to the formula (Ref. 2). The authors mixed equivalent amounts of the two reagents in a Teflon test tube at below 0°C, closed the tube tightly and kept it for 12 h at 20°C, by which time the reaction was complete. After treating the reaction product with ice-water raspberry-colored crystals were obtained which were insoluble in cold water but slowly decomposed in it. After washing with methanol and vacuum-drying the

Card 1/3

Synthesis of Complex Fluorides of Hexavalent Rhenium

S/020/61/136/001/023/037
B016/B055

product corresponded to the formula K_2ReF_8. After several hours in air, the raspberyy-colored crystals begin to decompose, accompanied by a color-change via pale blue to black. This is due to hydrolysis, by which water-soluble products forming pale-blue solutions are obtained. K_2ReF_8 is soluble in hot water forming green solutions which soon turn brown owing to hydrolysis. K_2ReF_8 can be stored in polyethylene ampoules, but rapidly decomposes at contact with glass and corrodes it. K_2ReF_8 is soluble in HF with decomposition and precipitation of ReF_6. By dissolving K_2ReF_8 in HF containing 0.02% water and cooling the pale-blue solution to -70°C, pale-blue crystals consisting of potassium oxyhexafluorhenate $K_2ReOF_6 \cdot 2HF$ were obtained. With water, this salt forms a pale-blue solution which after 10 min turns green and soon after brown. A similar color-change takes place on dissolving the potassium oxyhexafluorhenate in HF. Though the authors did not analyze the crystals precipitated from the green solutions on cooling, they assume them to be a hydrolysis product of potassium hexa-fluorhenate, for instance $K_2ReO_2F_4$. The substances prepared (Ref. 2) were

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analyzed by hydrolyzing the sample with a measured quantity of alkali (equations (3) and (4)). Table 1 shows the required amount of alkali in gram equivalents of the salt, and the quantity of salt obtained. Rhenium in solution was determined as nitron-perrhenate and fluorine by titration with $AlCl_3$. Finally, the authors compare the substances prepared in this work with analogous complex compounds of molybdenum, tungsten and uranium with potassium, rubidium and cesium (Refs. 4-6). There are 1 figure, 1 table, and 6 references: 1 Soviet, 2 German, and 3 British.

ASSOCIATION: Institut obshchey i neorganicheskoy khimii im. N.S.Kurnakova Akademii nauk SSSR (Institute of General and Inorganic Chemistry imeni N. S. Kurnakov of the Academy of Sciences USSR)

PRESENTED: July 7, 1960, by I. V. Tananayev, Academician

SUBMITTED: June 4, 1960

27879
S/020/61/140/001/016/024
B103/B101

5.2420

AUTHORS: Nikolayev, N. S., and Ippolitov, Ye. G.

TITLE: The problem of interaction between rhenium hexafluoride and metal fluorides

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 140, no. 1, 1961, 129-132

TEXT: The authors studied the interaction between ReF_6 and alkali fluorides: (a) in a ReF_6 melt, and (b) dissolved in ClF_3. The latter method is analogous to that by N. S. Nikolayev and V. F. Sukhoverkhov (DAN, 137, No. 2, 1961). The alkali fluorides were obtained from carbonates and chemically pure hydrofluoric acid. ReF_6 was produced (1) by combustion of rhenium in a ClF_3 flow diluted with nitrogen (authors' paper: DAN, 134, No. 5, 358 (1960)); (2) (quicker method) by reaction of fluorine with rhenium metal at 150°C in a nickel vessel. The products obtained by (1) and (2) were identical. The reaction of ReF_6 with alkali fluorides was conducted in a Teflon autoclave, which withstood the ReF_6

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vapor pressure at 200°C. All operations were carried out under cooling with liquid nitrogen. All alkali fluorides, except for lithium fluoride, were found to react in two stages according to the equations: $ReF_6 + 2MeF = Me_2ReF_8$ (1), and $Me_2ReF_8 + ReF_6 \rightleftharpoons 2MeReF_7$ (2). (1) describes the reaction at a molar ratio between ReF_6 and alkali fluoride of 1:2 at 200°C. Pink octafluoro rhenates Me_2ReF_8 are formed, where Me = Na, K, Rb, or Cs. At low temperatures, the Me_2ReF_8 (except for Na_2ReF_8) add a further ReF_6 molecule according to formula (2). Thus, yellow heptafluoro rhenates $MeReF_7$ are produced, where Me = K, Rb, or Cs. The $MeReF_7$ differ from Me_2ReF_8 by their color, crystal shape, and chemical properties. The heat resistance of $MeReF_7$ decreases in the order Cs > Rb > K > Na. $NaReF_7$ cannot be produced at all, whereas $KReF_7$ starts dissociating at 50°C according to (2), and after long storing in vacuo is transformed to K_2ReF_8. Thermogravimetric studies in the dry nitrogen flow

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showed that $KReF_7$ rapidly decomposes at 200 - 300°C with ReF_6 escaping. The residue after decomposition amounts to 59% by weight which corresponds to the K_2ReF_8 weight calculated according to (2). Heat resistance of K_2ReF_8 is very high. Only at 700°C, the weight inconsiderably decreases, and a yellow, heterogeneous product is formed. Although $RbReF_7$ and $CsReF_7$ are more resistant than $KReF_7$, they are completely transformed according to the equation $MeReF_7 + MeF = Me_2ReF_8$ (3) under heating with corresponding fluorides at 200°C. The salts produced consisted of one crystalline phase. At V. G. Kuznetsov's laboratory, the X-ray spectra of these salts were recorded in an ionization chamber. The density of K_2ReF_8 was found to be 4.35 g/cm^3. The magnetic moment (measured by V. I. Belova in Ya. K. Syrkin's laboratory) of all Me_2ReF_8 is 1.7 - 1.6μ_B. The $MeReF_7$ are also paramagnetic, but their magnetic moment is smaller than calculated. All Me_2ReF_8 (except for Na_2ReF_8) are almost unsoluble in water. When left standing with water for some minutes, the solution

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turns light-blue. This happens at once with Na_2ReF_8, the solution turning brown due to disproportionation after 10 min. This is characteristic of hexavalent rhenium. This process is greatly accelerated by heating the solution. All $MeReF_7$, however, are readily soluble in cold water, simultaneously forming light-blue solutions. There are 3 figures, 2 tables, and 3 Soviet references.

PRESENTED: April 3, 1961, by I. V. Tananayev, Academician

SUBMITTED: March 27, 1961

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5.2420

AUTHORS: Ippolitov, Ye. G., and Nikolayev, N. S.

TITLE: Properties of complex fluorides of hexavalent rhenium

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Otdeleniye khimicheskikh nauk, no. 5, 1962, 748-755

TEXT: The synthesis of complex rhenium(VI) fluorides from molten ReF_6 and alkali fluorides has the following course of reaction:
$2ReF_6 \rightleftharpoons ReF_4^{++} + ReF_8^{--}$; $2ReF_6 \rightleftharpoons ReF_5^{+} + ReF_7^{-}$;
$ReF_4^{++} + ReF_8^{--} + 2MF = M_2ReF_8 + ReF_6$; $ReF_5^{+} + ReF_7^{-} + MF = MReF_7 + ReF_6$.
Octafluoro rhenates of alkali metals hydrolyze in the succession:
$Cs_2[ReF_8] > Na_2[ReF_8] > K_2[ReF_8] > Rb_2[ReF_8]$. Cesium and sodium salts hydrolyze immediately, while potassium and rubidium salts take 30-40 min in cold water. Hydrolysis is considerably speeded up by stirring and

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heating. Blue solutions are formed by the addition of 40% HF or ice water (30-40 min stirring). The latter reaction has the form: $K_2[ReF_8] + H_2O = KReOF_5 + KF \cdot 2HF$. M^IReOF_5, M=K,Rb,Cs, were obtained by evaporation of the blue solutions. Their stability drops in the succession: $CsReOF_5 > RbReOF_5 > KReOF_5 > NaReOF_5$. Rhenium dioxide is separated in the decomposition process. Oxypentafluoro rhenates are readily soluble in water, alcohol, and ketones. The hydrolysis of potassium octafluoro rhenate in dilute solutions at 10°C was studied by the conductivity method on the conductivity-time curve, where three sections were established at 0.001 mole of $K_2[ReF_8]$ solution: (1) hydrolysis, (2) disproportionation of Re^{VI} to Re^{IV} and Re^{VII}, and (3) slow oxidation of Re^{IV} to Re^{VII} by means of atmospheric oxygen. The following reaction takes place: $4K_2ReF_8 + 14H_2O + O_2 = 4KReO_4 + 4KF + 28HF$. The blue solutions decompose as follows: $3K_2[ReF_8] + 12H_2O$.

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$=6K^{+} + 24F^{-} + 24H^{+} + 2ReO_4^{-} + ReO_2 \cdot 2H_2O$. Octafluoro rhenates possess a magnetic moment similar to that of an unpaired electron. The unpaired 5d electron, energetically weakly bound in the $[ReF_8]^{-2}$ ion, makes the valence state of Re^{VI} unstable and effects redox reaction: disproportionation, reduction by means of KI in acid medium, and oxidation by different agents. Since the potentials of ReO_3/ReO_4^{-} = -0.768 ± 0.005 v, and those of ReO_2/ReO_3 = -0.368 v, ReO_3 is a weaker oxidizing agent than Fe^{3+}. In acid medium ReO_3 separates iodine from iodides and is oxidized to rhenic acid by $FeCl_3$. Rhenium hexafluoride oxidizes silver and gold at 500°C. Rhenium (VI) iodides react readily with hydrazine and sulfurous acid in acid medium, separating a black amorphous precipitate in the process. In saturated KCNS solution potassium octafluoro rhenate dissolves in 10-15 min to form a green solution. From the latter, pyridine separates yellowish-green crystals of the composition $2(C_5H_5N_2) \cdot ReO(CNS)_3 \cdot HF \cdot H_2O$. Hexavalent rhenium is a strong reducing agent in alkaline and neutral

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mediums. Potassium octafluoro rhenate in saturated potassium bicarbonate solution is completely oxidized to potassium perrhenate by atmospheric oxygen. In oxidizing with permanganate, the reaction reads: $5Re^{VI} + Mn^{VIIH+} \rightarrow Mn^{II} + 5Re^{VII}$. Moreover, hexavalent rhenium is oxidized by potassium chromate in alkaline medium, H_2O_2 in alkaline medium, dilute HNO_3 and iron oxide in acid medium. Whereas octafluoro rhenates are not even decomposed at 650°C, heptafluoro rhenates dissociate at lower temperatures according to: $2MReF_7 \rightleftharpoons ReF_6 + M_2ReF_8$. Considerable loss of weight is observed in potassium heptafluoro rhenate at 70°C, and abundant separation of rhenium hexafluoride at 200°C. $RbReF_7$ is decomposed at 328°C, and cesium salt at 500°C. The X-ray analysis of heptafluoro rhenates revealed that there is no Rb_2ReF_8 in $RbReF_7$; K_2ReF_8 was established in $KReF_7$. Cesium and rubidium salts are isomorphous; potassium salt is not. Data obtained for $RbReF_7$: a = 4.99 kX,

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c = 5.26 kX; for $CsReF_7$: a = 5.17 kX, c = 5.50 kX. There are 7 figures.

ASSOCIATION: Institut obshchey i neorganicheskoy khimii im. N. S. Kurnakova Akademii nauk SSSR (Institute of General and Inorganic Chemistry imeni N. S. Kurnakov of the Academy of Sciences USSR)

SUBMITTED: December 15, 1961

Card 5/5

IPPOLITOV, Ye.G.

Synthesis of oxypentafluororhenates by hydrolysis of octafluororhenates. Zhur.neorg.khim. 7 no.4:940-941 Ap '62. (MIRA 15:4)
(Rhenium compounds)

IPPOLITOV, Ye.G.; KOZ'MIN, P.A.

X-ray study of potassium and rubidium octafluorhenates. Dokl. AN SSSR 142 no.5:1081-1083 F '62. (MIRA 15:2)

1. Institut obshchey i neorganicheskoy khimii im. N.S. Kurnakova AN SSSR. Predstavleno akademikom I.V.Tananayevym.
(Potassium fluorhenate—Spectra)
(Rubidium fluorhenate—Spectra)

IPPOLITOV, Ye. G.

IPPOLITOV, Ye. G.

Dissertation defended for the degree of Candidate of Chemical Sciences at the Joint Academic Council on Chemical Sciences; Siberian Branch 1962

"Investigation of Rhenium Hexaflouride and Complex Flourides of Hexavalent Rhenium."

Vestnik Akad. Nauk, No. 4, 1963, pp 119-145

BELOVA, V.I.; SYRKIN, Ya.K.; IPPOLITOV, Ye.G.; KOTEL'NIKOVA, A.S.; BABESHKINA, G.K.; DOVLYATSHINA, R.A.

Magnetic susceptibility of some rhenium compounds. Zhur. strukt.khim. 5 no. 2:281-287 Mr-Ap '64. (MIRA 17:6)

1. Institut obshchey i neorganicheskoy khimii imeni N.S. Kurnakova AN SSSR.

ACC NR: AP7003518 (A,N) SOURCE CODE: UR/0113/67/000/001/0014/0016

AUTHORS: Gintsburg, B. Ya. (Doctor of technical sciences); Minayev, N. I.; Ippolitov, Ye. S.; Shakhnazaryan, V. M.

ORG: none

TITLE: Effect of sealed closures of piston rings on the starting qualities of diesels

SOURCE: Avtomobil'naya promyshlennost', no. 1, 1967, 14-16

TOPIC TAGS: temperature dependence, temperature measurement, piston engine, diesel engine, engine component, ENGINE PISTON, ENGINE STARTER SYSTEM

ABSTRACT: The equation for compressed gas in a cylinder (with consideration of the leakage through the piston rings) is given as

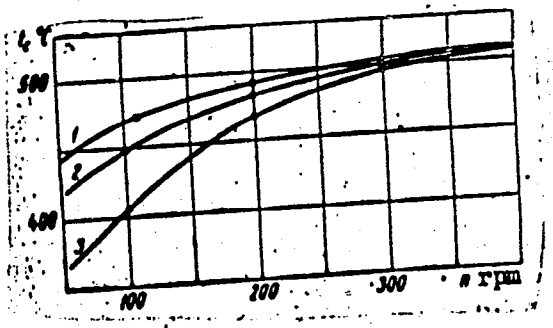
$$T_c = T_a\left[\varepsilon\left(1-\frac{\Delta G}{G_a}\right)\right]^{n_1-1},$$

where n_1 is the average exponent of the compression curve; T and G are the temperature and weight. The subscripts a and c refer to the start and the end of the compression;

Card 1/3 UDC: 621.436.629.113:62--24.3

ACC NR: AP7003518

Fig. 1. Air temperature at the compression ring vs number of engine rpm: 1 - three-component ring; 2 - ring with soldered closure; 3 - standard ring



$\Delta G = G_a - G_c$ is the gas loss during compression. With V representing the volume of gas, $\varepsilon = \frac{V_a}{V_c}$ is the geometrical degree of the engine compression. To determine the rpm effect on $\frac{\Delta G}{G_a}$ and T_c, tests were conducted on a single-cylinder assembly with a cylinder diameter of 150 mm and an effective $\varepsilon = 12.8$. The piston was driven by a Pendel-dynamo, and the gas leaking past the piston rings was collected from the crankcase and measured by a rotameter. The temperature was measured by a tungsten resistance thermometer replacing an injector in the head. Three types of piston rings were tested: a) the standard type with a 0.6-mm gap in the closure; b) a

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similar ring with the gap sealed by tin solder; c) a compounded ring of three overlapping layers with no gap. Where the leakage was small, $\frac{\Delta G}{G_a}$ vs rpm was hyperbolic. For standard rings $\frac{\Delta G}{G_a} = \frac{16}{n}$, and for the soldered gap it is $\frac{8,2}{n}$. The temperature dependence is shown in Fig. 1. Rings made by German and American firms have complex tongue closure sections which effectively seal and also compensate for small irregularities in the cylinder shape. Orig. art. has: 6 figures and 5 formulas.

SUB CODE: 21/ SUBM DATE: none/ ORIG REF: 001/ OTH REF: 002

Card 3/3

SERBENYUK, TS.V.; IPPOLITOVA, G.S.

Role of afferent influences in the formation of respiratory rhythm in amphibians. Nauch. dokl. vys. shkoly; biol. nauki no.2:49-52 '65. (MIRA 18:5)

1. Rekomendovana kafedroy fiziologii zhivotnykh Moskovskogo gosudarstvennogo universiteta im. M.V. Lomonosova.

IPPOLITOVA, L.V., glavnyy metodist; KLEKKERS, P.O.; KHOKHLOV, F.D., otvetstvennyy redaktor; KORNYSHO, Ye.G. , redaktor; BALLOD, A.I., tekhnicheskiy redaktor

["Latvia" pavilion; a guidebook] Pavil'on "Latviiskaia SSR"; putevoditel'. Moskva, Gos. izd-vo selkhoz. lit-ry, 1956. 28 p. (MLRA 9:9)

1. Moscow. Vsesoyuznaya sel'skokhozyaystvennaya vystavka, 1954-
2. Direktor pavil'ona (for Klekers)
(Latvia--Agriculture)
(Moscow--Agricultural exhibitions)

IPPOLITOVA, L. V.

Establish permanent cultivated pastures! Nauka i pered. op. v sel'khoz. 8 no.4:19-21 Ap !58. (MIRA 11:5)

1.Glavnyy metodist pavil'ona Latviyskoy SSR na Vsesoyuznoy sel'skokhozyaystvennoy vystvke.
(Pastures and meadows)

IPPOLITOVA, L.

Milk yields as well as butterfat content have gone up.
Nauka i pered.op.v sel'khoz. 9 no.11:34-36 N '59.
(MIRA 13:3)

1. Glavnyy metodist pavil'ona Latviyskoy SSR Vystavki dostizheniya narodnogo khozyaystva.
(Latvia--Dairy cattle)

LEBEDEV, B.N.; ZAZUBIN, A.I.; LOSHAKOVA, A.K.; IPPOLITOVA, M.V.; SAVRUKOVA, G.D.

Treatment of lean complex ores. Izv.AN Kazakh.SSR.Ser.met.obog.i ogneup. no.2:43-49 '60. (MIRA 13:8)
(Ore dressing)
(Nonferrous metals--Metallurgy)

BAZHENOV, A., inzh.; ZAIKINA, V., inzh.; IPPOLITOVA, V., inzh.

Device for erecting reinforced concrete columns. Na stroi. Mosk. 2 no.8:30 Ag '59. (MIRA 12:12)

1. Stroitel'nyy uchastok-19 tresta Mosstroy No.4.
(Columns, Concrete)

IPPOLITOVA, V. I.

GLAGOLEV, Pavel Alekseyevich; IPPOLITOVA, Valentina Ivanovna; GRIGOR'YEV, Ye.P., redaktor; USTIMENKO, L.F., redaktor; SOKOLOVA, N.N., tekhnicheskiy redaktor

[Anatomy of farm animals with principles of histology and embryology] Anatomiia sel'skokhoziaistvennykh zhivotnykh s osnovami gistologii i embriologii. Moskva, Gos. izd-vo sel'khoz. lit-ry, 1956. 472 p. (Veterinary anatomy) (MLRA 10:3)

IPPolitova, V. I.

GLAGOLEV, P.A., prof., doktor nauk; IPPOLITOVA, V.I., dots., kand. nauk.

Age changes in the weight of somatic muscles of horses. Dokl. TSKhA no.27:282-283 '57. (MIRA 11:4)

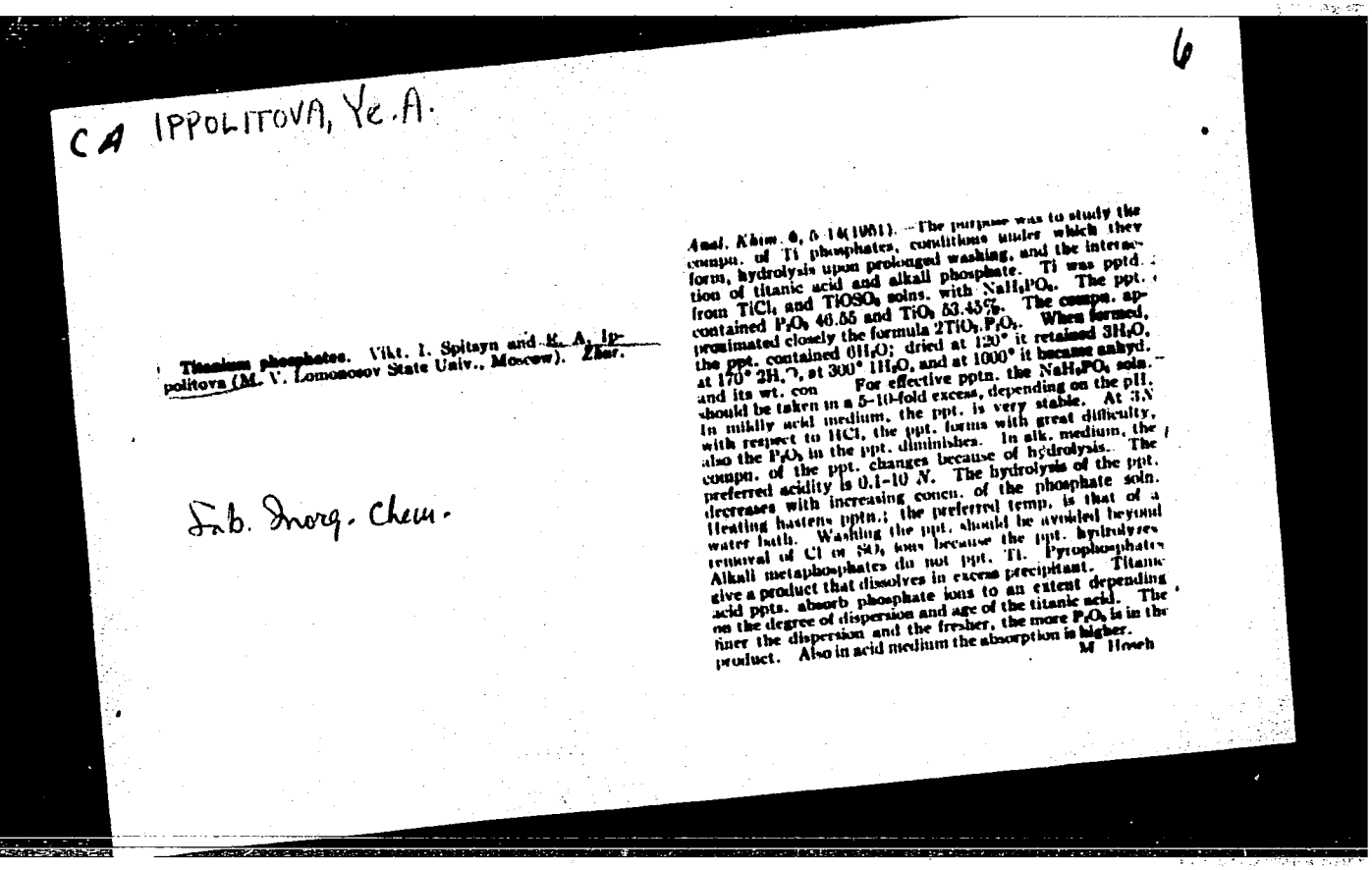
(Muscles) (Horses--Anatomy)

IPPOLITOVA, V.I., kand.biologicheskikh nauk, dotsent

Development of muscles in kholmogory cattle during the postnatal period. Izv. TSKhA no.3:216-223 '60. (MIRA 14:4)
(Muscles) (Cattle breeds)

GLAGOLEV, Pavel Alekseyevich; IPPOLITOVA, Valentina Ivanovna; DREVLYANSKAYA, N.I., red.; MAKHOVA, N.N., tekhn. red.; PROKOF'YEVA, L.N., tekhn. red.

[Anatomy of farm animals with principles of histology and embryology] Anatomiia sel'skokhoziaistvennykh zhivotnykh s osnovami gistologii i embriologii. 2., perer. izd. Moskva, Sel'khozizdat, 1962. 471 p. (MIRA 15:7)
(Veterinary anatomy)



CA IPPOLITOVA, Ye.A.

6

Titanium phosphates. Vikt. I. Spitsyn and E. A. Ippolitova (M. V. Lomonosov State Univ., Moscow). Zhur. Fiz. Khim. 6, 5 14(1961). — The purpose was to study the compn. of Ti phosphates, conditions under which they form, hydrolysis upon prolonged washing, and the interaction of titanic acid and alkali phosphate. Ti was ppted. from $TiCl_4$ and $TiOSO_4$ solns. with NaH_2PO_4. The ppt. contained P_2O_5 46.55 and TiO_2 53.45%. The compn. approximated closely the formula $2TiO_2.P_2O_5$. When formed, the ppt. contained $6H_2O$; dried at 120° it retained $3H_2O$, at 170° $2H_2O$, at 300° $1H_2O$, and at 1000° it became anhyd. and its wt. con For effective ppta. the NaH_2PO_4 soln. should be taken in a 5–10-fold excess, depending on the pH. In mildly acid medium, the ppt. is very stable. At 3N with respect to HCl, the ppt. forms with great difficulty, also the P_2O_5 in the ppt. diminishes. In alk. medium, the compn. of the ppt. changes because of hydrolysis. The preferred acidity is 0.1–10 N. The hydrolysis of the ppt. decreases with increasing concn. of the phosphate soln. Heating hastens ppta.; the preferred temp. is that of a water bath. Washing the ppt. should be avoided beyond removal of Cl or SO_4 ions because the ppt. hydrolyzes. Alkali metaphosphates do not ppt. Ti. Pyrophosphates give a product that dissolves in excess precipitant. Titanic acid ppts. absorb phosphate ions to an extent depending on the degree of dispersion and age of the titanic acid. The finer the dispersion and the fresher, the more P_2O_5 is in the product. Also in acid medium the absorption is higher.

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Fiz. Khim.

SOV/20-120-5-51/6.

AUTHORS: Kovba, L. M., Ippolitova, Ye. A., Simanov, Yu. P., Spitsyn, Vikt. I., Corresponding Member, Academy of Sciences, USSR

TITLE: An X-Ray Investigation of Alkali Metal Uranates (Rentgenograficheskoye issledovaniye uranatov shchelochnykh elementov)

PERIODICAL: Doklady Akademii nauk SSSR, 1958, Vol. 120, Nr 5, pp. 1042-1044 (USSR)

ABSTRACT: A survey of publications is given at the beginning (Refs 1-5). Experimental data on the structure of the diuranates are lacking. The authors obtained monocrystals of the normal lithium uranates (α-modification), sodium (β-modification), furthermore of the diuranates of sodium, potassium, and rubidium. Table 1 gives the lattice parameters of the investigated uranates, their density and other data. They were calculated from X-ray diffraction patterns and determined by means of a pycnometer. The calculation of the intensities confirms the structures which are described below. Tetragonal or pseudotetragonal layers $(UO_2)O_2$ were found in the structures of α-$LiUO_4$, β-Na_2UO_4, K_2UO_4, Rb_2UO_4 and Cs_2UO_4 which were

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An X-Ray Investigation of Alkali Metal Uranates

analogous to those of the $BaUO_4$- and β-$UO_2(OH)_2$ structures (Refs 3, 4). The atoms of the alkaline elements are placed between the layers. The normal potassium-, rubidium-, and cesium uranates are isostructural. The values of the parameters Z_{Me}^{I} (where Me^{I} is an alkaline element) and Z_{O_1} are given in table 2 as well as the interatomic distances U-O, Me^{I}-O and of the shortest distances from O to O. The structures of the mentioned compounds are described in detail. The structures of the lithium-, sodium-, and potassium monouranates are different from those described by Zachariasen (Zakhariasen, Ref 5). The structures of the diuranates of Na, K and Rb are defective structures. The parameters X_{O_1} and X_{O_2} are given in table 3. Hexagonal layers of a composition $UO_{3.5}$ were found in the structures. The oxygen atoms may partly be substituted by fluorine under formation of a fluoro uranate. The authors obtained uranates (V) of these metals by reduction of Na- and K-diuranates at 450-500°. They both belong to the structural type of the perovskite. They are normally soluble in nitric acid, however, only slowly in acetic acid. Thus they are no analogues of "tungsten

An X-Ray Investigation of Alkali Metal Uranates

bronzes". There are 3 tables and 7 references.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova (Moscow State University imeni M. V. Lomonosov)

SUBMITTED: February 11, 1958

1. Alkali metal uranates--Structural analysis 2. X-ray diffraction analysis--Applications 3. Alkali metal uranates--Properties 4. Single crystals--Analysis

5(3) PHASE I BOOK EXPLOITATION SOV/1648

Nemkova, O.G., Ye. I. Burova (Deceased), O.I. Vorob'yeva, Ye.A. Ippolitova, and A.V. Lapitskiy.

Rukovodstvo k prakticheskim zanyatiyam po neorganicheskoy khimii (Handbook for Laboratory Work in Inorganic Chemistry) [Moscow] Izd-vo Mosk. univ., 1959. 299 p. 15,000 copies printed.

Ed. (Title page): V.I. Spitsyn, Academician; Ed. (Inside book): S.F. Kondrashkova; Tech. Ed.: L.V. Lazareva.

PURPOSE: This handbook is intended for beginning students in chemistry departments of state universities.

COVERAGE: The book consisting of 35 chapters deals with the most important aspects of general and inorganic chemistry. The authors attempt to cover the properties of elements and their compounds as well as the synthesis of various inorganic compounds. The handbook should inculcate in students the habit of assembling and using modern laboratory equipment. Second semester students are expected

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to synthesize metal compounds and to study their properties. Since little theory is presented in this handbook, the students are expected to do independent work with chemical literature. The handbook is based on the long experience of the following professors and docents of the Moscow State University: E.F. Krause, Ye. F. Den'gin, V.S. Zaykov and A.D. Funk. There are no references.

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Ippolitova, Ye.A.

21(8) 5(0) SOV/55-59-3-29/32

AUTHOR: Lapitskiy, A.V.

TITLE: The First All-Union Conference of Universities and Colleges on Radiochemistry

PERIODICAL: Vestnik Moskovskogo universiteta. Seriya matematiki, mekhaniki, astronomii, fiziki, khimii, 1959, Nr 3, pp 221-223 (USSR)

ABSTRACT: This conference was convened by the initiative of the laboratoriya radiokhimii khimicheskogo fakul'teta MGU (Labora-
tory of Radiochemistry of the Department of Chemistry of Moscow
State University) and was held in Moscow from April 20 to
April 25, 1959. It was attended by professors, teachers, and
scientific collaborators of 32 universities and colleges of
the Soviet Union. In his opening address, An.N.Nesmeyanov,
Doctor of Chemical Sciences, stressed the importance of radio-
chemistry. 30 lectures were delivered by members of Moscow
State University: Laboratoriya yadernoy fiziki (Laboratory of
Nuclear Physics): N.P.Rudenko, A.I.Sevast'yanov: Production of
Beryllium-7 by the Reaction (T,2n); I.Stary, N.P.Rudenko:
Production of Radioactive Isotopes by Extraction as β-Diketonates.
Laboratoriya radiokhimii (Laboratory of Radiochemistry): An.N.
Nesmeyanov, B.N. Korolev, L.A.Sazonov: Separation of Radio-
active Isotopes in the Irradiation of Colloids; An.N.Nesmeyanov,
Ye.A.Borisov, K.S.Filatov, V.Kondratenko, Chzhan Tszs-syan,
K.Panek, B.Shukla: Secondary Reactions of the Recoil Atoms
^{80}Br and ^{82}Br in Methyl Bromides; B.G.Dzantiyev, I.M.Barkalov,
V.V.Khrapov: Reactions of "Hot" Sulfur- and Nitrogen Atoms With
Hydrocarbons; B.Z.Iofa, L.V.Bobrov, A.N.Ratov: The State of
Radioactive Isotopes in Extremely Dilute Solutions; N.S.
Neruklova, I.V.Melikhov: General Theory of the Coprecipitation
of Radioactive Elements With Non-isomorphous Crystalline
Precipitates; A.V.Lapitskiy, I.A.Savich, Chzhuan Ya-yuy:
Coprecipitation of Protactinium With Complex Compounds of Ti,
Nb, and Ta; V.N.Fedtseyev, V.V.Ivanenkov, V.N.Bochkarev:
Application of Radioactive Paper Chromatography"; K.B.
Zaborenko, A.M.Babeshkin, M.S.Apl'chenko: Accumulation and
Separation of Recoil Atoms on the Basis of the Example Ra^{224}
and Ra^{228}; K.B.Zaborenko, A.M.Babeshkin, V.A.Beyevskaya,
L.L.Melikhov: Application of the Emanation Method for the

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Investigation of the Transformation of Solids; V.I.Spitsyn,
K.B.Zaborenko, A.M.Babeshkin, M.A.Radicheva: Transformation of
Heteropoly-compounds; K.B.Zaborenko, A.M.Babeshkin, I.V.
Kovalenko: Geochemistry of Radium; K.B.Zaborenko, V.I.
Korobkov: Microanalytical Determination of Uranium by Means
of Nuclear Emulsions. An.N.Nesmeyanov, Da Dyk-Man: Partial
Vapor Pressure of Co in Alloys With Ni; Yu.A.Priselkov, Yu.A.
Sapozhnikov, A.V.Tseplyayeva, V.V.Karelin: The Behavior of a
Molecular Metal Beam in the High-frequency Field; I.V.Golubtsov,
A.V.Lapitskiy, V.K.Shiryayev: Vapor Pressure of Niobium
Dioxide; I.V.Golubtsov, Yu.A.Likhachev, Ye.K.Bakov: Various
Constructions of the Scintillation Attachment to the Apparatus
of the Type B. Kafedra analiticheskoy khimii (Chair of
Analytical Chemistry): I.P.Alimarin, N.P.Borzenkova: Niobium^{95}
as a Radioactive Tracer; I.P.Alimarin, T.A.Belyavskaya, Hu
Bin-yan': Sorption of Zr by Ion Exchangers; A.I.Busev, V.M.
Byr'ko: The Use of Complex Pyrazolinedithiocarbamates in Radio-
metry. Kafedra neorganicheskoy khimii (Chair of Inorganic
Chemistry): Ye.A. Ippolitova, Yu.P.Simanov, L.M.Kovba, G.P.
Polunina, I.A. Bereznikova: Uranates of Some Bivalent Metals;
V.G.Knyazina, O.G. Nezkova: Uranium Compounds With Acids of

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Low-valence P; V.I. Spitsyn: The Influence of the Radioactive
Radiation of Solids on Their Physico-chemical Properties;
I.Ye.Mikhaylenko, V.I.Spitsyn: Isotope Exchange in the System
K_2SO_4 - SO_3 at High Temperature. Kafedra khimicheskoy kinetiki
(Chair of Chemical Kinetics): I.V.Berezin, V.L.Antonovskiy,
N.F.Kazanskaya: Application of Tritium for the Purpose of
Determining the Velocity Constants of the Separation of Organo-
hydrogen Compounds. An.N.Nesmeyanov delivered a detailed
lecture on the Methodology of Radiochemical Instruction at
the chemical departments of universities.

Card 3/4

IPPOLITOVA, Ye.A.; SIMANOV, Yu.P.; KOVBA, L.M.; POLUNINA, G.P.; [redacted]NIKOVA, I.A.

Chemistry of the uranates of some divalent elements. Radiokhimiia 1 no.6:660-664 '59. (MIRA 13:4)
(Uranates)

5(2)

AUTHORS: Yefremova, K. M., Ippolitova, Ye. A., Simanov, Yu. P., Spitsyn, Vikt. I., Academician

SOV/20-124-5-26/62

TITLE: An Investigation of the Composition of the Uranates of Alkali Elements Produced by a Dry Procedure (Issledovaniye sostava uranatov shchelochnykh elementov, poluchayemykh sukhim putem)

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 124, Nr 5, pp 1057-1060 (USSR)

ABSTRACT: The interaction of uranium oxides or uranium salts with oxides and salts of alkali metals at high temperatures results in the formation of monouranates of alkali metals, moreover, of diuranates of Li, Na, and K; finally, $Na_2U_3O_{10}$ and $K_2U_6O_{19}\cdot 6H_2O$ can be produced from uranyl sulphate with NaCl and KCl (Refs 1-3). There are no exhaustive statements in literature as to what uranates of each alkali metal are formed in this case. The statements made by W. H. Zachariasen (Zakhariasen, Ref 5) on hexagonal and pseudohexagonal layers in the Li-, Na-, and K-monouranates are inconsistent with statements made by other research workers (Ref 7). This divergence may be due to polymorphous modifications. The authors

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investigated the conditions for the recovery of said uranates, which are formed when UO_3 and U_3O_8 are heated in air with the carbonates of corresponding elements, and the composition of said uranates (by thermal and X-ray phase analysis). The components were used in amounts corresponding to the formation of uranates with various Me_2^IO- and UO_3 ratios. After discussing the resulting uranates of several alkali metals, the authors state that the indications given in the literature (Ref 1) on the behavior of the uranates at high temperature do not convey a proper impression of their thermal stability. Table 1 shows the results obtained by heating monouranates between 700 and 1,100° in intervals of 100°. It was found that lithium monouranate is thermally stable and does not decompose within 60 hours at 1,300°. On the other hand, Na-, K-, and Rb-uranates decompose at 1,200-1,300°, forming diuranates; Cs_2UO_4 decomposes at 1,200° within 6 hours. Thus, the stability of the monouranates decreases from Li_2UO_4 to Cs_2UO_4. This is consistent with the increase in the cation defor-

mability and with the volatility of the oxides (Ref 10) in this series. Diuranates of Na and K are perfectly stable at 1,300°; Rb-diuranate varies its structure when calcined for 30 hours at 1,200° to form either a new modification or to undergo partial decomposition. Cs-diuranate is decomposed at 1,200°. K-triuranate is decomposed at 1,100-1,200° to form $K_2U_2O_7$ and U_3O_8. The reaction is reversible in the case of slow cooling and heating on the air to 800-900°. Rb-tetrauranate has the highest stability of all polyuranates produced. The hexauranates of the alkali metals are less stable than other polyuranates. There are 2 figures, 1 table, and 10 references, 2 of which are Soviet.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova (Moscow State University imeni M. V. Lomonosov)

SUBMITTED: November 6, 1958

S/081/62/000/010/016/085
B138/B101

AUTHORS: Yefremova, K. M., Ippolitova, Ye. A., Simanov, Yu. P.

TITLE: Investigation of the composition of potassium uranates obtained by the dry method

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 10, 1962, 92, abstract 10V14 (Sb. "Issled. v obl. khimii urana". M., Mosk. un-t, 1961, 37 - 43)

TEXT: Using the method of thermal and X-ray phase analysis, a study has been made of the composition of the products formed when K_2CO_3 is heated with UO_3 or U_3O_8, taken in various different ratios. In all cases it was found that, independently of the composition of the inital mixture of K_2CO_3 with the U oxide, the di-uranate of potassium is first formed; then, depending on whether the K_2CO_3 or the U oxide is in excess, it changes to the ortho-, mono- or tri-uranate of potassium. Where there is interaction between the $K_2U_3O_{10}$ and U_3O_8 the tetra- and hexa-uranates are obtained in

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S/081/62/000/010/016/085
B138/B101

Investigation of the composition of ...

corresponding ratios. The powder pattern of the uranate K_4UO_5 has been identified and its axial parameters found. [Abstracter's note: Complete translation.]

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S/081/62/000/010/017/085
B138/B101

AUTHORS: Vidavskiy, L. M., Kovba, L. M., Ippolitova, Ye. A.

TITLE: Interaction between uranoso-uranic oxide and the sulfates of sodium and potassium

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 10, 1962, 92 - 93, abstract 10V15 (Sb. "Issled. v obl. khimii urana". M., Mosk. un-t, 1961, 63 - 64)

TEXT: Using the methods of thermal and X-ray phase analysis, studies have been made of the reaction of U_3O_8 with Na and K sulfates. The reaction between U_3O_8 and Na_2SO_4 begins at 500°C. As a result of this reaction sodium di-uranate and UO_2SO_4 are formed which enter into reaction at a higher temperature, resulting in the formation of the di-uranate. The reaction between K_2SO_4 and U_3O_8, which begins at 580°C, is accompanied by the formation of the potassium tri-uranate and UO_2SO_4. When the temperature is raised both these products react with K_2SO_4 to form the di-uranate.

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S/081/62/000/010/018/085
B138/B101

AUTHORS: Vidavskiy, L. M., Kovba, L. M., Ippolitova, Ye. A., Spitsyn, Vikt. I.

TITLE: Reaction of uranoso-uranic oxide with sodium and potassium nitrates

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 10, 1962, 93, abstract 10V16 (Sb. "Issled. v obl. khimii urana". M., Mosk. un-t, 1961, 65 - 66)

TEXT: Using the methods of X-ray phase and thermal analysis it has been found that reaction between U_3O_8 and $NaNO_3$ begins at 410°C. As a result of this reaction the Na di-uranate is formed which reacts at a higher temperature (530°C) with the nitrate, to form the Na mono-uranate. As a result of interaction between the U_3O_8 and KNO_3 (beginning at 390°C) the potassium di-uranate is formed. [Abstracter's note: Complete translation.]

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S/081/62/000/018/003/059
B101/B186

AUTHORS: Pechurova, N. I., Kovba, L. M., Ippolitova, Ye. A.

TITLE: Isotope and ion exchange between uranate precipitates and the ions of alkali elements

PERIODICAL: Referativnyy zhurnal., Khimiya, no. 18, 1962, 37 - 38, abstract 18B243 (In collection: Issled. v obl. khimii urana. M., Mosk. un-t, 1961, 108 - 120)

TEXT: The isotope and ion exchange between uranates precipitated from the solution at 22 - 85.6°C and the ions of alkali metals reaches equilibrium within 30 min. The isotope exchange between uranates of Na, K, Rb, and Cs with the equivalent quantity of the corresponding chlorides from the solutions is 21.68 - 83.38 % and 28 %, respectively. The degree of isotope exchange increases with increasing temperature. The ion exchange of lithium uranate with Na^+, Rb^+, and Cs^+ drops in this order from 8 to 2 % which, in the authors' opinion, is associated with the increasing difference of the ion radii. The ion exchange of sodium uranate with K^+, Rb^+, and Cs^+ is 30, 20, and 30 %, respectively; that of potassium uranate with Na^+ and

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Isotope and ion exchange ...

Cs^+ is 40 and 30; and that of cesium uranate with Na^+ and Rb^+ is 20 and 64 %, respectively. [Abstracter's note: Complete translation.]

Card 2/2

S/656/61/000/000/001/007
D244/D304

AUTHORS: Ippolitova, Ye.A., Simanov, Yu.P., Kovba, L.M., Murav'yeva, I.A., and Krasnoyarskaya, A.A.

TITLE: Reduction of uranates of the alkali elements with hydrogen

SOURCE: Spitsyn, V.I., ed. Issledovaniya v oblasti khimii urana; sbornik statey (Moscow) 1961, 131 - 140

TEXT: The authors investigated the reduction of alkali metal uranates with hydrogen. The salts were prepared by baking U_3O_8 with the corresponding alkali metal carbonates (ratio 1 : 3) and for Li, by the fusion of U_3O_8 with LiCl. Reduction was conducted in a tubular oven. Dried uranates were heated in the current of purified and dried hydrogen, flowing at the rate of 12 l/h. The temperatures of reduction was increased in steps of 100°C, from 100° to 1200°C, the reduction process at each temperature continuing for 1 hour. The various stages of reduction were characterized by changes in weight and color of the original uranates. The results indicate that the

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Reduction of uranates of the ...

reduction of the uranates begins at 400° - 500°C, with a rapid loss of weight at 600 - 800°C due to evaporation of metal hydroxides. The final product of reduction is UO_2. For lithium, sodium and cesium uranates, UO_2 is the first product of reduction. For potassium uranate KUO_3 is formed (having a structure of $CaTiO_3$) as an intermediate phase, followed by the formation of UO_2. Similar behaviour is shown by rubidium uranate which gives an intermediate phase $Rb_xUO_3 (x \sim 1)$. The author postulate that the process of reduction proceeds by (1) $Na_2UO_4 + H_2 = 2NaOH + UO_2$; $Na_2UO_4 + H_2 = Na_2O + UO_2 + H_2O$; $2Na_2O + H_2 = 2NaOH + 2Na$; and (2) $K_2UO_4 + H_2 = 2KUO_3 + 2KOH$; $2K_2UO_4 + H_2 = K_2O + 2KUO_3 + H_2O$. The reduction of Na, K and Rb diuranates was also investigated. The diuranates were prepared by precipitation from solutions of uranyl nitrates with the corresponding alkali hydroxides, or by fusion of the alkali metal chlorides with U_3O_8. The latter were used for X-ray examination. Reduction of $Na_2U_2O_7$ begins at 300°C. Between 380° and 440°C various phases are formed which have similar composition to the original diuranate,

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Reduction of uranates of the ...

but contain less oxygen. $NaUO_3$ is formed at 480°C and UO_2 at 500°C. Reduction of potassium diuranate gives KUO_3 at 450°C and $UO_{2\pm x}$ between 700° and 800°C. For rubidium diuranate a phase having a composition of Rb_xUO_3 forms together with UO_2. The reduction of $K_2U_3O_{10}$ shows that the process for potassium uranates which are more acidic than the diuranates goes through a stage of diuranate formation. The authors conclude that $NaUO_3$ and KUO_3 are not bronzes in contrast to Na_2WO_4 which has different chemical properties and gives on reduction a phase of variable composition. There are 8 tables and 13 references: 4 Soviet-bloc and 9 non-Soviet-bloc. The references to the English-language publications read as follows: G. Hägg, Nature, 135, 874, 1935; W.A. Mellor, A compr. treat. inorg. theor. Chem., 12, 1932; F.J. Gronvold, J. Inorg. Nuclear Chem., 1, 357, 1955.

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S/081/62/000/010/019/085
B138/B101

AUTHORS: Ippolitova, Ye. A., Bereznikova, I. A., Pechurova, N. I., Danilov, V. P.

TITLE: Composition studies of calcium, strontium and barium uranate precipitations, formed at different pH values of the solution

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 10, 1962, 93, abstract 10V17 (Sb. "Issled. v obl. khimii urana". M., Mosk. un-t, 1961, 173 - 181)

TEXT: The composition of Ca, Sr and Ba uranates formed at different solution pH values has been investigated. By means of X-ray diffraction analysis it was found that only a few hydrolysed mono-uranate and di-uranates of Ca could be precipitated from the solution. When sediments got at pH 9.5 - 6.6 were calcined a solid solution was formed on U_3O_8 base. Chemical analysis of the precipitated Sr uranates obtained at pH values corresponding to inflection points on the potentiometric titration curves showed the formation of mono-, di-, tri- and hexa-uranates of Sr. Most of them were heavily hydrolysed. The composition of the precipitated uranates depends

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on the order in which the reagent solutions are mixed. If a $UO_2(NO_3)_2$ solution is poured into an alkaline solution, orange-colored and partially hydrolysed mono-uranates (Sr) or di-uranates (Ca, Ba) are formed.. If the alkali is added to a $UO_2(NO_3)_2$ solution the precipitates are yellow and the more acid uranates are formed. The method of precipitating U in the form of the Ca uranate was checked by the action of the alkali in the presence of $CaCl_2$. Using radioactive isotopes Ca^{45} and Na^{24} it was found that if NaOH was introduced into the reaction mixture the Ca uranate is formed, the Na^+ ions being only adsorbed by the precipitate. In the presence of $CaCl_2$ the uranium is precipitated more fully. [Abstracter's note: Complete translation.]

S/189/61/000/006/005/005
D228/D304

AUTHORS: Dunayeva, K.M., Ippolitova, Ye.A. and Khrustaleva, G.D.

TITLE: Investigating the thermal stability of uranyl sulfate

PERIODICAL: Moscow. Universitet. Vestnik. Seriya II, khimiya, no. 6, 1961, 35-37

TEXT: In studying the thermal decomposition of uranyl sulfate the authors were primarily interested in ascertaining the temperature of dissociation of the anhydrous salt. The trihydrate was prepared by dissolving U_3O_8 in a solution of H_2SO_4 at 80° and evaporating the filtrate, when crystals containing 56.95% U and 8.04% S were obtained. On heating the $UO_2SO_4 \cdot 3H_2O$ the following changes were observed: the loss of 1 1/2 molecules

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of water at 20-115°, after which the hydrate is stable to 150°; complete dehydration at 300°, after which the anhydrate is stable to 720°; and the decomposition of the sulfate into U_3O_8 and SO_2 above 720°. Examination of the heating curve of uranyl sulfate, recorded by a Kurnakov pyrometer, shows that the endothermic effects at 125° and 300° respectively correspond to the loss of 1 1/2 molecules of water and the salt's full dehydration. There are 2 figures, 1 table and 2 non-Soviet-bloc references.

ASSOCIATION: Kafedra neorganicheskoy khimii (Department of Inorganic Chemistry)

SUBMITTED: May 20, 1960

Card 2/2

DUNAYEVA, K.M.; IPPOLITOVA, Ye.A.

Formation of uranium oxysulfide of the composition $2US_2 \cdot UO_2$.
Vest. Mosk. un. Ser. 2: Khim. 16 no.1:54-56 Ja-F '61.
(MIRA 14:4)

1. Kafedra neorganicheskoy khimii Moskovskogo universiteta.
(Uranium oxysulfide)

S/076/61/035/003/007/023
B121/B293

AUTHORS: Kovba, L. M., Ippolitova, Ye. A., Simanov, Yu. P., and Spitsyn, Vikt. I.

TITLE: Study of the crystalline structure of uranates. I. Uranates with tetragonal $(UO_2)O_2$ layers

PERIODICAL: Zhurnal fizicheskoy khimii, v. 35, no. 3, 1961, 563-568

TEXT: The authors produced single crystals of α-Li_2UO_4 and β-Na_2UO_4, and determined the periods of their unit cells. It was not possible to produce K-, Rb-, and Cs monouranates in the form of single crystals; therefore, they were studied by the powder method only. The studies were made with РКОП (RKOP) and РКД (RKD) X-ray cameras of the NIIF MGU (NIIF MGU (Scientific Research Institute of Physics of Moscow State University)). α-Li_2UO_4 single crystals were obtained by fusing U_3O_8 together with anhydrous lithium chloride, and β-Na_2UO_4 single crystals by fusing U_3O_8 with a mixture of sodium carbonate and sodium chloride. It was found that α-Li_2UO_4 and

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S/076/61/035/003/007/023
B121/B203

Study of the ...

β-Na_2UO_4 crystallized rhombically and had the following lattice parameters: α-Li_2UO_4: a = 6.06; b = 5.13; c = 10.52; β-Na_2UO_4: a = 5.97; b = 5.795; c = 11.68. Potassium-, rubidium-, and cesium monouranates belong to the structural type K_2NiF_4 (tetragonally body-centered), β-Na_2UO_4 may be regarded as a rhombically distorted K_2NiF_4 structure. The authors discussed the arrangement of alkali metals in monouranate single crystals. The uranyl oxide lattice of β-Na_2UO_4 is maintained in α-Li_2UO_4, but a different arrangement of alkali metal atoms is more likely in α-Li_2UO_4. The structures of lithium, sodium, and potassium monouranates determined are not identical with those indicated by W. H. Zachariasen (Ref. 4: Manch. Pr. Report CP-2611, p. 14). The authors explain this disagreement with the polymorphous properties of uranates. There are 3 tables and 11 non-Soviet-bloc references. The two references to English-language publications read as follows: W. H. Zachariasen, Manch. Pr. Report CP-2611, p. 14; W. Wait, J. Inorgan. and Nucl. Chem., 1, 309, 1955.

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S/076/61/035/003/007/023
B121/B203

Study of the ...

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova
(Moscow State University imeni M. V. Lomonosov)

SUBMITTED: June 23, 1959

Card 3/3

KOVBA, L.M.; POLUNINA, G.P.; IPPOLITOVA, Ye.A.; SIMANOV, Yu.P.; SPITSYN, Vikt.I.

Study of the crystalline structure of uranates. Part 2: Uranates containing uranyl oxygen chains. Zhur. fiz. khim. 35 no. 4:719-722 Ap '61. (MIRA 14:5)

1. Moskovskiy gosudarstvennyy universitet im. M.V. Lomonosova, kafedra neorganicheskoy khimii.
(Uranates)

IPPOLITOVA, Ye.A.; KOVBA, L.M.

Structure of uranates. Dokl.AN SSSR 138 no.2:377-380 My '61.
(MIRA 14:5)

1. Moskovskiy gosudarstvennyy universitet im. M.V.Lomonosova. Predstavleno akademikom V.I.Spitsynym.
(Uranates)

IPPOLITOVA, Ye.A.; KOVBA, L.M.

Composition and properties of uranates. Dokl.AN SSSR 138 no.3:605-607 My '61. (MIRA 14:5)

1. Moskovskiy gosudarstvennyy universitet im. M.V.Lomonosova. Predstavleno akademikom V.I.Spitsynym.
(Uranates)